



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,110	02/13/2006	Achim Adam	710100-22	5504
7590	07/25/2008		EXAMINER	
Robert L Stearns Dickinson Wright 38525 Woodward Avenue Bloomfield Hills, MI 48304-2970		ZIMMERMAN, JOHN J		
		ART UNIT	PAPER NUMBER	
		1794		
		MAIL DATE	DELIVERY MODE	
		07/25/2008	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/568,110	<b>Applicant(s)</b> ADAM ET AL.
	<b>Examiner</b> John J. Zimmerman	<b>Art Unit</b> 1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 21 April 2008.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-8,11 and 12 is/are pending in the application.

4a) Of the above claim(s) 11 and 12 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-8 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 13 February 2006 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

## FOURTH OFFICE ACTION

### *Amendments*

1. The "AMENDMENT" received April 21, 2008 has been entered. Claims 1-8 and 11-12 are pending in this application.

### *Election/Restrictions*

2. Newly submitted claims 11-12 are directed to inventions that are independent or distinct from the invention originally claimed for the following reasons: New claim 11 is drawn to method of forming a multilayer bearing wherein diffusing of a portion of the single layer of nickel into the overlay and forming a tin-nickel layer between a remaining portion of the single nickel layer and the overlay. New claim 12 is drawn to a method of constructing multilayer bearing comprising a providing a backing layer, disposing a bearing layer, disposing an intermediate layer and disposing an overlay layer. This original claims were drawn to an article and not to methods. No search for the methods have been made in this prosecution. Claim 12 is restrictable from article claim 1 since claim 1 does not require diffusion and therefore the article produced by claim 12 would be distinct from the article recited in independent claim 1. Claim 11 is restrictable from claim 1 since the article of claim 1 could be produced by applying a laminate of the

Art Unit: 1794

bearing metal, intermediate layer and overlay layer to the backing layer instead of disposing each layer sequentially on the backing layer. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by *original presentation* for prosecution on the merits.

Accordingly, claims 11-12 have been withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

***Specification***

3. The disclosure is objected to because of the following informalities: It has been noticed that the current abstract contained in this application is a copy of the front page of the international application. The current abstract should be replaced by a single paragraph abstract on a sheet of paper without extraneous matter. Appropriate correction is requested.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Art Unit: 1794

6. Independent claim 1 recites the phrase "for diffusion of a portion of said single layer of nickel of said intermediate layer directly into said overlay and forming an initially absent tin-nickel layer between the remaining portion of said single layer of nickel and said overlay" (e.g. claim 1, lines 6-9). The beginning of the phrase ("for diffusion of a portion of said single layer of nickel of said intermediate layer directly into said overlay") appears to recite that the diffusion is an intended future step. The latter part of the phrase ("and forming an initially absent tin-nickel layer between the remaining portion of said single layer of nickel and said overlay"), however, appears to recite that diffusion has occurred. It is not clear whether the entire phrase describes an article wherein the diffusion step may be performed or whether the entire phrase describes an article where the diffusion step has been performed. Regarding the former, if independent claim 1 recites an article in which diffusion has not yet occurred, it is not clear how dependent claim 8 can simultaneously require that interdiffusion has occurred.

7. Independent claim 1 recites "to prevent full diffusion of said intermediate layer into said overlay" (e.g. claim 1, last two lines). Full diffusion of the intermediate layer would depend on the time period and environmental conditions during use and/or the process parameters used in a diffusion step. The examiner notes that nickel intermediate layers of greater than 4  $\mu\text{m}$  could certainly be fully diffused under higher temperatures and longer time periods. Therefore, since claim 1 already recites that the intermediate layer is greater than 4  $\mu\text{m}$ , it is unclear if the phrase "to prevent full diffusion of said intermediate layer into said overlay" would potentially now require a thickness greater than the minimum thickness already recited in the claim.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huhn (U.S. 2001/0016267).

10. Huhn discloses a bearing having a backing layer, a lead-bronze bearing layer, a nickel intermediate layer, a further nickel-tin layer and an overlay (e.g. see claim 1). The backing layer can be steel (e.g. see paragraph [0037]). The first nickel intermediate layer has a thickness of between 1 to 4 µm (e.g. see paragraph [0030]) and the nickel-tin second intermediate layer has a thickness of between 2 and 7 µm (e.g. see paragraph [0029]) and the overlay can have a thickness of 5 to 25 µm (e.g. see paragraph [0028]). The bearing alloy can be copper-aluminum, copper-tin, copper-tin-lead, etc. . . (e.g. see paragraph [0030]). The bearing is exposed to elevated temperatures that would inherently cause some interdiffusion between the layers (e.g. see paragraph [0047]). Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based

Art Unit: 1794

on inherency under 35 U.S.C. § 102 or on *prima facie* obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977). When there is a substantially similar product, as in the applied prior art, the burden of proof is shifted to the applicant to establish that their product is patentably distinct not the examiner to show that the same process of making, see *In re Brown*, 173 U.S.P.Q 685, and *In re Fessmann*, 180 U.S.P.Q. 324. The overlay of Huhn is a tin based alloy that contains 5 to 48 % of tin-copper particles (e.g. see paragraphs [0019] and [0023]). While the overall copper range in the tin based overlay of Huhn may not be coextensive with the claimed range, the subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a *prima facie* case of obviousness, see *In re Malagari*, 182 USPQ 549. Likewise, while the thickness range of the overlay of Huhn may not be coextensive with all the claimed overlay thickness ranges, the ranges overlap and it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to practice the thickness ranges of Huhn over his entire disclosed range. In addition, while the thickness range of the nickel first intermediate layer of Huhn may be 1 to 4  $\mu\text{m}$  and the applicant claims a thickness range of "greater than 4  $\mu\text{m}$ ", the values of "4  $\mu\text{m}$ " and "greater than 4  $\mu\text{m}$ " are so close that *prima facie* one of ordinary skill in the art would not expect them to be patentably distinct. A review of the applicant's disclosure shows no factual data patentably distinguishing a nickel layer thickness value of "4  $\mu\text{m}$ " from "greater than 4

Art Unit: 1794

µm". Regarding the limitation that the intermediate layer be a single layer of nickel in direct contact with the bearing metal and the overlay (e.g. claim 1, lines 6-7), it is noted that while Huhn uses a combination of an intermediate nickel layer and a second intermediate nickel-tin layer instead of a single nickel layer, Huhn clearly discloses that the use of a single nickel intermediate diffusion barrier layer between the bearing metal and the overlay of a multilayer bearing is a conventional bearing arrangement in the prior art (e.g. see paragraph [0008]). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a single nickel intermediate layer between a bearing metal and an overlayer because this simply yields the prior arrangement before the use of dual intermediate layers as disclosed by Huhn. It would be expected by one of ordinary skill in the art that use of a single nickel layer would require the layer to be at least as thick as the first intermediate nickel layer of Huhn in order to fulfill its disclosed barrier function. There is no patentable distinction in regressing to the prior art single nickel intermediate layer embodiment and the elimination of the nickel-tin second intermediate layer of Huhn and its function would have been obvious to one of ordinary skill in the art if an improvement in performance does not justify the economics of including the second intermediate layer. See MPEP 2144.01(II). See *Ex parte Wu*, 10 USPQ 2031 (Bd. Pat. App. & Inter. 1989).

***Response to Arguments***

11. Applicant's arguments filed April 21, 2008 have been fully considered but they are not persuasive with regards to the remaining rejections.

Art Unit: 1794

12. Regarding the rejection under 35 U.S.C. 103(a) as being unpatentable over Huhn (U.S. 2001/0016267), applicant argues that the examiner uses improper hindsight in suggesting that a single nickel layer of a thickness greater than 4  $\mu\text{m}$  would be obvious from Huhn's teachings. The examiner notes, however, that while Huhn uses a combination of an intermediate nickel layer and a second intermediate nickel-tin layer instead of a single nickel layer, Huhn clearly discloses that the use of a single nickel intermediate diffusion barrier layer between the bearing metal and the overlay of a multilayer bearing is a conventional bearing arrangement in the prior art (e.g. see paragraph [0008]). It would be expected by one of ordinary skill in the art that use of a single nickel layer would require the layer to be at least as thick as the first intermediate nickel layer of Huhn in order to fulfill its disclosed barrier function. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a single nickel intermediate layer between a bearing metal and an overlayer because this simply yields the prior arrangement before the improvement realized by the use of dual intermediate layers as disclosed by Huhn. There is no patentable distinction in simply regressing to the prior art single nickel intermediate layer embodiment with the expectation of simply not taking advantage of the improvements that would be expected to be conferred by the second intermediate layer. The elimination of the nickel-tin second intermediate layer of Huhn and its function would have been obvious to one of ordinary skill in the art if an improvement in performance for a particular bearing would not be expected to justify the economics of including the second intermediate layer and its advantages. See MPEP 2144.01(II). See *Ex parte Wu*, 10 USPQ 2031 (Bd. Pat. App. & Inter. 1989). Regarding the issue of the thickness of the nickel intermediate layer,

Art Unit: 1794

while the thickness range of the nickel first intermediate layer of Huhn may be 1 to 4  $\mu\text{m}$  and the applicant claims a thickness range of "greater than 4  $\mu\text{m}$ ", the values of "4  $\mu\text{m}$ " and "greater than 4  $\mu\text{m}$ " are so close that *prima facie* one of ordinary skill in the art would not expect them to be patentably distinct. A review of the applicant's disclosure shows no factual data patentably distinguishing a nickel layer thickness value of "4  $\mu\text{m}$ " from "greater than 4  $\mu\text{m}$ ". In the paragraph spanning pages 5-6 of applicant's response, applicant argues that applicant has provided ample support within applicant's disclosure to patentably distinguish a nickel layer thickness value of "1-4  $\mu\text{m}$ " from "greater than 4  $\mu\text{m}$ ". A review of the applicant's specification, however, finds only discussion of the criticality of using a nickel layer of "greater than 4  $\mu\text{m}$ ". No factual evidence has been found to support a criticality of using a nickel layer of "greater than 4  $\mu\text{m}$ ". Mere arguments and conclusory statements in the specification, unsupported by objective evidence, are insufficient to establish unexpected results, *In re Wood, Whittaker, Stirling, and Ohta*, 199 USPQ 137 (CCPA 1978). Applicant may wish to submit factual evidence establishing applicant's argument that a nickel layer thickness value of "greater than 4  $\mu\text{m}$ " is patentably distinct from a nickel layer thickness of "1-4  $\mu\text{m}$ ". See MPEP 716.01(c). See MPEP 716.02. See MPEP 716.02(d).

### ***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a). A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action

Art Unit: 1794

and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Zimmerman whose telephone number is (571) 272-1547. The examiner can normally be reached on 8:30am-5:00pm, M-F. Supervisor Rena Dye can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

15. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 1794

John J. Zimmerman  
Primary Examiner  
Art Unit 1775

/John J. Zimmerman/  
Primary Examiner, Art Unit 1794

jjz  
July 18, 2008